

Page 56, line 2, delete

"CCCCCCCATCTCCACTTCCTCCCCCTCGAGTGATC" and insert

--CCCCCCCATCTCCACTTCCTCCCCCTCGAGTGATC--;

line 3, delete

"AGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATG" and insert

--AGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATG--;

line 7, delete

"GACGATCTCACAGAGAAGATCCGAAAAGCTACCAGGAAACTTCCCTCACTCTCG"

and insert

--GACGATCTCACAGAGAAGATCCGAAAAGCTACCAGGAAACTTCCCTCACTCTGC--.

Page 58, line 2, delete "of";

line 3, after "coding" insert --,--, delete "on" and  
insert --upon--,

line 4, after "host" insert --,--.

IN THE CLAIMS:

Please cancel claim 38 without prejudice or disclaimer and  
amend the following claims:

1. (Twice Amended) A cloned DNA sequence of *hap* gene,  
wherein the sequence has the formula:

ATGTTGACTGTATGGATGTTCTGTCAGTGAGTCCTGGCAAATCCTGGATTCTACACTGCGAGT  
CCGTCTTCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAA  
TGGCAGCATGGCACACTGCTGAATCAATTGAAACACAGAGCACCAGCTCTGAGGAACCTCGTCCCA  
AGCCCCCCCATCTCCACTTCCTCCCCCTCGAGTG [AT] TACAAACCTGCTCGTCTGCCAGGACAAA  
TCA

TCAGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATGTAAGGGCTTTCCGCAGAAGTATTCAGA  
AGAATATGATTTACACTTGTCAACCGAGATAAGAACTGTGTTATTAAATAAGTCACCAGGAATCGAT  
GCCAATACTGTCGACTCCAGAAGTGCTTGAAGTGGGAATGTCAAAGAATCTGTCAGGAATGACA

*E* 10  
*uncl.*

GGAAACAAGAAAAAGAAGGAGACTTCGAAGCAAGAATGCACAGAGAGCTATGAAATGACAGCTGAGT  
TGGACGATCTCACAGAGAAGATCCGAAAAGCTCACCAAGGAAACTTCCCTCACTCT [CG] GCCAGC  
TGG  
GTAAATAACACCACGAATTCCAGTGCTGACCATCGAGTCCGACTGGACCTGGCCTCTGGGACAAAT  
TCAGTGAACGGCCACCAAGTCATTATTAAGATCGTGGAGTTGCTAACGTCTGCCTGGTTCA  
CTGGCTTGACCATCGCAGACCAAATTACCCCTGCTGAAGGCCGCCTGCCTGGACATCCTGATTCTA  
GAATTTGCACCAAGGTATAACCCAGAACAAAGACACCATGACTTCTCAGACGGCCTTACCCCTAAATC  
GAACTCAGATGCACAATGCTGGATTTGGCCTCTGACTGACCTTGTGTTCACCTTGCCAACCAGC  
TCCTGCCTTGGAAATGGATGACACAGAAACAGGCCTCTCAGTGCATCTGCTTAATCTGTGGAG  
ACCGCCAGGACCTTGAGGAACCGACAAAAGTAGATAAGCTACAAGAACCAATTGCTGGAAGCACTAA  
AAATTTATATCAGAAAAGACGACCCAGCAAGCCTCACATGTTCAAAGATCTTAATGAAAATCA  
CAGATCTCCGTAGCATCAGTCTAAAGGTGCAGAGCGTGTAAATTACCTTGGAAATTCCTG  
GATCAATGCCACCTCTCATTCAAGAAATGATGGAGAATTCTGAAGGACATGAACCCCTGACCCCAA  
GTTCAAGTGGGAACACAGCAGGACACAGTCCTAGCATCTCACCCAGCTCAGTGGAAAACAGTGGGG  
TCAGTCAGTCACCACTCGTGCATAA,

wherein said DNA is in an isolated and purified form and encodes a retinoic acid receptor comprising a DNA binding domain and a hormone binding domain.

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57. (Amended) A [cloned] DNA fragment comprising a portion of a DNA sequence, wherein the DNA sequence encodes [encoding] a polypeptide of *hap* gene, [wherein] and the DNA [sequence has a formula] fragment comprises a nucleotide sequence selected from the group consisting of sequences:

- (a) GTCAGGAATGACAGGAACAGAAAAAGAAGGAGACTTCGAAGCAAGAATGC;
- (b) GCTGAGTTGGA[C]GATCTCACAGAGAAGATCCGA;
- (c) GGGGTCA[C]GTCAGTCACCACTCGTGCCT;

(d) AATGACAGGAACAAGAAAAAGAAGGGAGACT;

(e) ATGTTGACTGTATGGATGTTCTGTCAGTGAGTCCTGGCAAATCCT[C]GGATTC  
CTACACTGCG

AGTC CGTCTT CCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCG  
GAA

TGGCAGC ATCGGCACACTGCTCAATCA; and

(f) CATGAACCCTTGACCCCCAAGTTCAAGTGGAACACAGCAGAGCACA[C]GTCCTAG  
CATCTCACCC

AGCTCAGTGGAAAACAGTGGGGTCA[C]GTCAGTCACCAC TCGTGCAA,

*a"*  
*cont.*

wherein sequence (a) encodes amino acid residues 151 to 167,  
sequence (b) encodes amino acid residues 175 to 185, sequence (c)  
encodes amino acid residues 440 to 448, sequence (d) encodes amino  
acid residues 153 to 162, sequence (e) encodes amino acid residues  
1 to 53, and sequence (f) encodes amino acid residues 413 to 448  
of the mature retinoic acid receptor- $\beta$  polypeptide.

4. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GTCAGGAATGACAGGAACAAGAAAAAGAAGGGAGACTTCGAAGCAAGAATGC] is sequence  
(a).

5. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GCTGAGTTGGACCATCTCACAGAGAAGATCCGA] is sequence (b).

6. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GGGGTCACTCAGTCACCAC TCGTGCAA] is sequence (c).

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7. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula:

AATGACAGGAACAAGAAAAAGAAGGAGACT] is sequence (d).

8. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula:

ATGTTGACTGTATGGATGTTCTGTCAGTGAGCCTGGCAAATCCTCGATTCTACACTGCGAGTC  
TCTTCCTGCATGCTCCAGGAGAAACCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAATGGC  
CATCGGCACACTGCTCAATCA] is sequence (e).

9. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula:

CATGAACCCTTGACCCCAAGTTCAAGTGGAACACAGCAGAGCACACTCCTAGCATCTCACCCAGCT  
GTGGAAAACAGTGGGGTCACTCAGTCACCACACTCGTCAA] is sequence (f).

Claim 39, line 1, before "DNA" insert --A--, delete "38" and insert --59--.

Claim 40, line 1, before "DNA" insert --A--.

Claim 41, line 2, delete "38" and insert --59--.

Claim 42, line 2, delete "38" and insert --59--.

58. (Amended) A method for identifying a ligand [to] for a retinoic acid receptor, said method comprising:

(A) isolating DNA sequences having a retinoic acid receptor ligand-binding domain and a DNA-binding domain;

(B) constructing a chimeric gene by substituting operative portions of the DNA-binding domain region of the DNA sequence of step (A) with operative portions of a DNA-binding domain region from human oestrogen receptor;

(C) introducing into a suitable receptor-deficient host cell: (1) the chimeric gene from step (B), and (2) [the oestrogen-responsive] a reporter gene [vit-tk-CAT] functionally linked to an operative hormone response element, wherein the hormone response element is capable of being activated by the DNA-binding domain region of the receptor protein encoded by the chimeric gene of step (B);

(D) challenging the transfected host cell from step (C) with at least one compound to be evaluated for ligand binding activity with a chimeric receptor protein encoded by the chimeric gene of step (B);

(E) monitoring induction of the reporter gene;

(F) identifying as a functional ligand(s) that ligand(s) which is capable of inducing production of the protein product of the reporter gene.

Please add the following new claim:

--59. A DNA sequence comprising a nucleotide sequence:

CCCATGC  
GAGCTGTTGAGGACTGGGATGCCGAGAACGCGAGCGATCCGAGCAGGGTTGTCTGGGCACCGT  
ATGTTGACTGTATGGATGTTCTGTCAGTGAGTCCTGGCAAATCCTGGATTCTACACTGCGAGT  
CC  
GTCTCCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAATG  
GCAGCATCGGCACACTGCTCAATCAATGAAACACAGAGCACCAGCTCTGAGGAACTCGTCCAAG  
CCCCCCATCTCCACTTCCTCCCCCTCGAGTGTACAAACCTGCTCGTCTGCCAGGACAAATCATC  
AGGGTACCACTATGGGTCAGCGCCTGTGAGGGATGTAAGGGCTTTCCGCAGAAGTATTAGAAG  
AATATGATTTACACTTGTCAACCGAGATAAGAACTGTGTTATTAATAAGTCACCAGGAATCGATCG  
CAATACTGTCGACTCCAGAAGTGCTTGAAGTGGGAATGTCCAAAGAATCTGTCAGGAATGACAGG